

This listing of claims presented below replaces all prior versions and listings of claims in the application.

Listing of Claims

Claims 1-25 (cancel)

Claim 26 (new) 1. A method of producing a transgenic plant, comprising treating the tissue of a plant with *Agrobacterium tumefaciens* which comprises at least one vector into whose composition there enters at least one gene of interest wherein in the step of transformation a stagewise co-cultivation of explants is used, which comprises:

- i) selecting one or more leaf segments for preparing explants;
- ii) preparing leaf disks by separating a segment from each disk, followed by inoculating and co-cultivating the leaf disks with agrobacteria;
- iii) removing excess agrobacteria from the leaf disks;
- iv) separating a first lot of explants from the side of the first section;
- v) transferring explants onto a selection and regeneration medium; and
- vi) repeating steps iv) and v) to prepare additional explants until a last lot of explants from the selected leaf disks has been prepared;

wherein the preparation of each of the subsequent lots of explants is carried out after a time interval that is required for the transformation of plant cells and formation of acquired resistance to abiotic and biotic stresses in the leaf disks by inducible activity and for lowering the frequency of somaclonal variations in the transgenic plant.

Claim 27 (new) The method according to claim 26, wherein the vector contains a gene that codes for at least one target protein.

Claim 28 (new) The method according to claim 26, wherein the vector contains a gene that codes for at least one protein which contributes to lowering necrosis in the step of transformation.

Claim 29 (new) The method according to claim 26, wherein the vector contains a gene that codes for at least one protein which enhances plant resistance to phytopathogens and which is selected from the group consisting of PR-1, PR-2, PR-3, PR-4, and PR-5.

Claim 30 (new) The method according to claim 26, wherein the vector contains a gene that codes for a combination of proteins according to claims 2, 3, or 4.

Claim 31 (new) The method according to claim 29 wherein the vector contains a gene that codes for thaumatin, belonging to PR-5.

Claim 32 (new) The method according to claim 29, wherein the gene codes resistance to fungi selected from the group consisting of *Phytophthora fragariae*, *Verticillium albo-atrum*, *Mycosphaerella fragariae*, *Diplocarpon earliana*, *Dendrothoma obscurans*, *Botrytis cinerea*, and *Sphaerotheca humuli*.

Claim 33 (new) The method according to claim 26, wherein the plant is a dicotyledon.

Claim 34 (new) The method according to claim 26, wherein the plant is selected from the group consisting of apple, pear, garden strawberry, carrot and tomatoes.

Claim 35 (new) The method according to claim 34, wherein the garden strawberry plant is selected from the group of varieties: Selekt, Chambly, Chandler, Oka, Yamaska, L'Acadie, L'Authentique Orleans, Rosalyne, Roseberry, Saint-Pierre, Donna, Enzed Levin, Enzed Lincoln, Vilanova, Durval, Redcrest, Bountiful, Redgem, Pelican, Primitime, Mohawk, Latestar, Winoma, and Feyerverk.

Claim 36 (new) A method according to claim 1, wherein the number of steps in the stagewise co-cultivation of explants is in the range of from 2 to 5.

Claim 37 (new) The method according to claim 26, wherein the number of steps in the stagewise co-cultivation of explants is in the range of from 3 to 4.

Claim 38 (new) The method according to claim 26, wherein the preparation of each of the subsequent lots of explants is carried out after a time interval of from 1 to 5 days.

Claim 39 (new) The method according to claim 26, wherein the preparation of each of the subsequent lots of explants is carried out after the time interval of 3 days.

Claim 40 (new) The method according to claim 26, wherein acquired resistance to abiotic and biotic stresses is obtained by excluding growth regulators from the medium.

Claim 41 (new) The method according to claim 26, wherein the composition of the selection medium and of the regeneration medium includes TDZ, IBA and kanamycin.

Claim 42 (new) The method according to claim 41, wherein the concentration of TDZ is from 1 to 10 mg/l.

Claim 43 (new) The method according to claim 41, wherein the concentration of TDZ is 5 mg/l.

Claim 44 (new) The method according to claim 41, wherein the concentration of IBA is from 0 to 0.3 mg/l.

Claim 45 (new) The method according to claim 41, wherein the concentration of IBA is 0.3 mg/l.

Claim 46 (new) The method according to claim 41, wherein the concentration of kanamycin is from 10 to 100 mg/l.

Claim 47 (new) The method according to claim 41, wherein the concentration of kanamycin is 50 mg/l.

Claim 48 (new) The method according to claim 26, wherein the ratio of the section length and the explant surface area is from 0.1 mm/mm² to 2 mm/mm² .

Claim 49 (new) The method according to claim 26, wherein the ratio of the section length and the explant surface area is 0.5 mm/mm² .